Received: 10 December 2020 | Revised: 29 January 2021 | Accepted: 14 February 2021

DOI: 10.1002/mde.3317

RESEARCH ARTICLE

WILEY

# Two-stage decision-making within the firm: Analysis and case studies

**Yu-Lin Hsu**[1] | **Gavin C. Reid**[2,3]

[1]Department of Accounting and Finance, University of Strathclyde, Glasgow, UK

[2]School of Economics and Finance, University of St Andrews, St Andrews, UK

[3]Centre for Business Research at Cambridge Judge Business School, University of Cambridge, Cambridge, UK

**Correspondence**
Gavin C. Reid, School of Economics and Finance, University of St Andrews, Castlecliffe, 1 The Scores, St Andrews KY16 9AR, UK.
Email: gcr@st-andrews.ac.uk; g.reid@cbr.cam.ac.uk

**Funding information**
Carnegie Trust for the Universities of Scotland, Grant/Award Number: research project grant; ESRC; Duke University

This article analyses, with case study illustrations, a two-stage decision support technique for making informed choices within firms. The technique can assist managers by the use of simple decision-tree diagrams, assigning values to its branches. The technique is based on the microeconomics of choice orderings, and we demonstrate how appropriate decision trees can be constructed and applied. This technique is illustrated by three case study vignettes based on real actions of UK firms. These show how such decision trees can both aid our understanding of choices made and assist in the practice of choosing financial reporting regimes and techniques.

## 1 | INTRODUCTION

This paper applies the microeconomics of preference orderings and decision trees to view firms' choice behavior through the theoretical and empirical lens of two-stage decision-making (Bhargave et al., 2015; Li et al., 2014; Xie & Lee, 2015). It illustrates this modelling approach using a set of three UK case studies, in which the two choice variables are *financial reporting regimes* and *techniques*. Our theoretical framework allows us to investigate whether a company's decision-making process is *sequential* (in two senses) or *nested/simultaneous* (Birnbaum, 2010; Colman & Stirk, 1999; Hensher, 1994) and—if sequential—whether a firm chooses its financial reporting regime, or its techniques, first. Our case studies (Cooper & Morgan, 2008), founded on fieldwork within several UK companies, a methodology well respected in managerial economics (Rubin & Dnes, 2010), enable us to illustrate thoroughly how, in practice, the detailed attributes of decision-making develop (Trotman et al., 2011). Thus, our use of theory is viewed empirically, through fieldwork evidence on how two-stage decision-making works in practice, considering such key features as exposure to risk, complexity of financial reporting and the time pressure of commercial and regulatory deadlines.

An early insight of Simon (1959) was that companies, like individuals, have preferences, which allow them to order alternatives, for example, over goods, strategies and techniques. Subsequently, Simon (1979) added a further insight which is relevant to parsimonious decision-making in this article—that although human actors rationally seek a best outcome, there are limits to human cognition, like memory, calculation and reasoning, which make rationality bounded. Humans often use heuristics to overcome this bounded rationality. Two-stage decision-making, as deployed in this article, is an example. To illustrate, it is a common method in job recruitment, where a first sift of candidates is made, using broad criteria, like qualifications, followed by a second sift, which uses more focused criteria like prior workplace experience. In our case study illustrations, we investigate how firms make choices over (1) financial reporting regimes like the International Financial Reporting Standards (IFRS) or the Generally Accepted Accounting Practice in the UK (UK GAAP) and (2) techniques to implement them, like market or cost approaches to valuing intangibles. This follows up on the insights of Simon (1959, 1979) by

suggesting how the heuristic of two-stage decision-making can help to solve this important decision problem.

Two-stage decision modelling will be familiar to many regional economists through optimal location models. In the case of housing economics, the two-stage modelling might involve (1) the move–stay decision and (2) the destination choice decision. A variant of this is an intra-urban two-stage model, with (1) choosing a neighbourhood and (2) choosing a dwelling place. In Haynes and Fotheringham's (1990) article, the modelling is explicitly econometric using variants of logit/tobit choice models.

In managerial economics too, the two-stage approach has been found useful. Typically, it has been implemented in schematic, rather than econometric form, often using flow diagrams. For example, Arogyaswamy et al. (1995) model firm turnaround using stages (1) 'halt decline' and (2) 'implement recovery'. Wu et al. (2005) assess the performance of online firms using the stages (1) 'web site visits' and (2) 'view to buy'. Finally, Gaston-Breton and Martın (2011) adapt a generic 'screening and selection' two-stage model for decision support in identifying (1) the most suitable country in which to market a product and (2) the best market niche within the country.

The approach of our article lies more on the managerial economics spectrum, with its emphasis being decision support, rather than positive economics. It advocates the sketching of simple decision trees to display alternatives clearly, and to use them for decision support by attaching values to such alternatives, using the calibrated 'stated preferences' of agents within the firm, like owners, employees and managers. The two-stage decision problem we model in this article is of how the firm (1) chooses a regulatory regime under which to report financially and (2) chooses the technique(s) by which reporting is accomplished.

In commending using this tool, we recognize that such models should not be applied mechanically, but rather should be used for decision support, with a healthy injection of complementary evidence, including hard data and human observation. In this context, Khan, Dhar and Wertenbroch (2005) have warned us not to overemphasize 'utilitarian criteria', which relate solely to the functional aspect of running a business (like spreadsheets), to the neglect of 'hedonic criteria', which relate to experiential and discretionary aspects of running a business (like motivational management). An advantage of two-stage modelling, as emphasized by Bhargave et al. (2015), is that it lends itself to balancing the utilitarian and hedonic. In their article, they indicate through three case study vignettes the way in which decisions can be made, balancing the utilitarian and the hedonic. This maintains principles of logic, without neglecting human characteristics and the business environment of the firm, in a social, regulatory and economic sense.

To develop our two-stage model, we introduce two types of preference orderings, *lexicographic* (*Lex* for short) and the *co-lexicographic* (*CoLex* for short) (Colman & Stirk, 1999; Dragon et al., 2018; Harzheim, 2005; Houy & Tadenuma, 2009), and an unordered alternative to these, *nested* (*Nest* for short) or *simultaneous*. These mathematical tools remain important in economic theory (Mandler, 2020) and are a part of modern developments in cryptography (Dragon et al., 2018). They will be used in this article to explain how companies make choices over financial reporting regimes and the techniques that support them. Our approach treats such corporate decision-making as a two-stage decision problem.

The structure of our paper is as follows. Section 2 covers the theory and models of this article, covering microeconomic choice theory, and Section 3 explains the fieldwork methods by which primary-source data in the United Kingdom were obtained. In Section 4, a private firm's (Company Alpha) decision-making process across time is elaborated, in terms of its use of a *sequential* choice mode. By contrast to this private company, Section 5 illustrates a public firm's choice behavior (Company Beta) for a *nested* choice mode, given *free* choices, and discusses its *sequential* choice mode when choices are *tied*. Finally, a third case study illustration is provided, in Section 6, again of a public company (Company Gamma), which is used to compare findings with those in the previous two sections, with an emphasis on ease of execution and transparency. Section 7 further discusses the three case studies and summarizes the findings, and Section 8 concludes this paper.

## 2 | MODELS OF SEQUENTIAL AND SIMULTANEOUS CHOICE

This section expounds briefly, generally shorn of technical exposition, the bare bones of sequential and simultaneous choice making in microeconomic theory. Underpinning this approach is the presumption that individual preferences drive choosing behavior. We discuss ways in which choices are made sequentially, as a prelude to showing how in practice (see Sections 4–6) such theory can be applied to choices over financial reporting regimes and the techniques that support them. On these theoretical foundations, choosing behavior is developed in terms of ways of making decisions when sequences are essential (e.g. choosing a financial reporting regime before choosing the technique that supports it; or choosing a technique that matches existing skills, then choosing the financial reporting regime in which it can be best deployed).

This leads to a theoretical framework that permits the analysis of two-stage decision-making in lexicographic (*Lex*) or co-lexicographic (*CoLex*) terms: informally, ordering like books in a library (*Lex*), or the converse (*CoLex*) (Colman & Stirk, 1999; Dragon et al., 2018; Harzheim, 2005; Houy & Tadenuma, 2009). Thus, we will show how sequential decisions can be analysed in terms of decision trees that display potential decisions at each stage, and the payoffs (in terms of net or ratio utilities) that are attached to each potential action, as represented by a branch within the decision tree.

As mentioned before, companies also have preferences over various alternatives (Simon, 1959). For example, firms have preferences over financial reporting regimes, each one being a whole system of accounting standards, such as IFRS. Similarly, it might have preferences over financial reporting techniques, each one of which is a detailed accounting method allowed within a specific regime, such as the fair value approach to valuing investment properties. In this paper, two types of preference orderings, *lexicographic* (*Lex* for short) and the

*co-lexicographic* (*CoLex* for short), are introduced (Dragon et al., 2018; Harzheim, 2005). The *Lex* approach works like ordering books on a shelf in a library. For example, suppose preferences for shelving books in order can be denoted by the inequality sign (<). When applied to word strings for book titles, an ordering might be expressed by something like a < aa < aaa < ab < aba. This would be used to order five books in lexicographic on a shelf. As we shall see below, the *CoLex* approach is in a sense the converse or mirror image of the *Lex* method. We will use *Lex* and *CoLex* concepts to help us explain how companies make accounting choices over regimes and the techniques that support them. Our approach treats such corporate decision-making as a two-stage choice problem.

## 2.1 | Lexicographic (Lex) ordering

Consider Sets X and Y, whose elements will be used by personnel within the firm (e.g. the financial or accounting director) to make decisions (e.g. about regimes and techniques). Let $X = (x_1, x_2)$ and $Y = (y_1, y_2)$, where $x_i$ and $y_i$ are corresponding utilities of *X* and *Y*. If an individual's preference follows a lexicographic order, *X* is preferred to *Y* if and only if $x_1 > y_1$ or $x_1 = y_1$ and $x_2 > y_2$ (Colman & Stirk, 1999; Harzheim, 2005; Houy & Tadenuma, 2009).

In the framework of a two-stage choice model, we suppose $x_1$ and $y_1$ are the utilities of choice in the first stage, and we regard $x_2$ and $y_2$ as the utilities of choice in the second stage. In this situation, if an individual applies a lexicographic ordering, it implies that he or she first deals with the choice problem of the first stage (i.e. considering utilities $x_1$ and $y_1$) and then determines the options in the second stage (i.e. evaluating utilities $x_2$ and $y_2$). This decision-making process involves a sequential choice, which moves from the first stage to the second stage. Existing literature (Birnbaum, 2010; Colman & Stirk, 1999) on this kind of sequential behavior emphasizes that when choices in the first stage are perceived as more crucial than those in the second stage, people tend to make decisions in a lexicographic order.

## 2.2 | Co-lexicographic (CoLex) ordering

Though, a less well-known preference ordering, the co-lexicographic (*CoLex*) ordering, Dragon et al. (2018), is useful to our purpose. In a sense that will become clear, this ordering compares choice sets in the opposite direction to the lexicographic (Bekmetjev et al., 2003).

Considering again the distinct sets $X = (x_1, x_2)$ and $Y = (y_1, y_2)$, a co-lexicographic (*CoLex*) ordering implies that *X* is preferred to *Y* if and only if $x_2 > y_2$ or $x_2 = y_2$ and $x_1 > y_1$. A person with *CoLex* preferences considers the choices listed in the second stage (i.e. comparing utilities $x_2$ and $y_2$) before making decisions about the choices in the first stage (i.e. comparing utilities $x_1$ and $y_1$). In this sense, he or she goes in the opposite direction to the person with *Lex* preferences. Similarly, although the *CoLex* choice pattern is sequential, the sequence is the exact opposite of the Lex choice pattern, starting from the second stage.

Although lexicographic (*Lex*) orderings play an important role in theories of choice in microeconomics, there has been very little research in corporate decision-making, which uses, or applies, this concept. To the best of our knowledge, only one study has attempted to analyse corporate choices using lexicographic orderings. This is in an experimental study of decision-making in auditing by Uecker and Kinney (1977). They illustrated how practitioners might prioritize certain rules and discovered that *Lex* orderings were used when making auditing judgements. So far as we know, no study has yet explained a firm's reporting choices by *CoLex* preferences.

## 2.3 | Nested choices

In addition to the *Lex* and *CoLex* preferences, other decision-making patterns are possible, of which the most important is that individuals might elect options from both stages simultaneously (Hensher, 1994; Tu & Goldfinch, 1996). In our paper, this will be called a *nested* or *un-staged* choice. An analysis of livestock markets by Bellemare and Barrett (2006) illustrates how the *nested* choice pattern can arise in a two-stage model. In their work, the first stage was deciding whether to enter a market, and the second stage was the transaction amount. They found evidence of both staged (i.e. sequential) and simultaneous (i.e. nested) behavior, and their empirical evidence suggested that the sequential choice pattern leads to a better outcome than the nested.

## 2.4 | Financial reporting regimes and techniques

We now take our discussion of two-stage decision models into the practical domain. If a firm first chooses the *i*th financial reporting regime ($X^i$) without considering the technique choices and then chooses the *j*th technique combination ($X^{ij}$) under this chosen regime, this will be our first type of sequential choice (from stage one to stage two). This is a *Lex* decision-making process. In this situation, this firm chooses from the choice set of financial reporting regimes $\{X^1, X^2, \ldots\}$ selecting the one that generates the highest utility $u(X^i) = x_i$. It then chooses the technique combination with the highest utility, which we denote as $x_{ij}$. Each accounting choice $X^{ij}$ can be considered as an ordered set $X^{ij} = (x_i, x_{ij})$, where the first utility $x_i$ is related to the regime choice and the second utility $x_{ij}$ is associated with the choice of technique combinations. The utility of an accounting alternative $X^{ij}$ will be determined by the utility of the relevant regime choice and technique choice and can be expressed as a (joint) function of regime and technique utilities, $u(X^{ij}) = f(x_i, x_{ij})$. Because all technique combinations under regime *i* will share the same regime utility $x_i$, this firm now only needs to compare the second utility $x_{ij}$ under this chosen regime. Furthermore, the utility associated with technique combination $x_{ij}$ is a function of utilities of different techniques for treating various parts of financial reports. This can be expressed as $x_{ij} = f(\mathbf{x}_{ijk}) = f(x_{ij1}, x_{ij2}, \ldots)$, where the *k*- index denotes different financial reporting techniques, used in different parts of financial reports.

Consider now the second-type sequential choice: Suppose now the company first selects techniques and then decides its regime. Its decision-making process starts from the second stage and moves on to the first stage. That is, this firm follows a *CoLex* preference ordering when choosing accounting modes. The company first considers the utilities of technique combinations $x_{ij} = f(\mathbf{x}_{ijk})$, where the argument of function $f(.)$ is a vector of techniques, indexed by $k$. After electing the technique combination with the maximum utility, this firm determines its financial reporting regime by comparing utilities of regimes $\{x_1, x_2, \ldots\}$.

The third type of choice behavior, in the two-stage choice model context, is called a *nested* choice or a *simultaneous* choice. In a *nested* choice (*Nest*), the firm considers and evaluates all available choices of regimes and techniques and chooses the accounting mode $X^{ij}$, which maximizes the utility $u\ (X^{ij}) = f(x_i, x_{ij})$. When choosing the accounting mode $X^{ij}$, this company determines its regime and technique simultaneously. The firm does not make reporting/technique choices in stages, and the nested choice is derived from balancing the utilities of regimes and techniques. It is when the relative importance, in utility terms, of regime choices and technique choices is not evident that a company tends to make such decisions simultaneously. Although there is no specific preference ordering to express the nested choice, this decision-making process is often discussed in choice studies (Bellemare & Barrett, 2006; Hensher, 1994), as it presents a rational alternative to staging.

For assistance in understanding our subsequent analysis of the three case studies, Table 1 summarizes the three choice patterns we have examined and used in this paper and their corresponding preference types (viz. *Lex*, *CoLex* and *Nest*). Under *Lex* (top line) we go from regime to technique; under *CoLex* (middle line), we go from technique to regime; and under *Nest* (third line), choice is un-ordered or un-staged (viz. simultaneous).

## 3 | FIELDWORK METHODS

Our methods combined administered questionnaires and fieldwork-based interviewing (Reid, 2015) to gather UK data on individual preferences at the corporate level. This allowed us to calibrate preferences in terms of utilities. Utilities so derived are called 'stated preferences', being acquired *directly from the person making the choice* (typically the financial director of the firm) rather than indirectly from market data (e.g. via a 'demand curve') (Adamowicz et al., 1994; Hensher, 1994; Reid & Smith, 2007a, 2007b; Schipper, 2010). These utilities permit calibration (typically by a 5-point Likert scale) of perceived benefits (B) and costs (C) of choices made, which in turn can be used to calculate *net benefits* (B − C) or *ratio benefits* (B/C), in utility terms, of actions taken by financial directors over regimes and techniques.

**TABLE 1** Choice patterns and preference orderings of the two-stage choice model of accounting modes

| Choice patterns | Preference orderings |
|---|---|
| Sequential choice (regime → technique) | Lexicographic (*Lex*) ordering |
| Sequential choice (technique → regime) | Co-lexicographic (*CoLex*) ordering |
| Nested/simultaneous choice | No preference ordering (*Nest*) |

### 3.1 | Choice behavior

Combining theory and methods allows us to consider choosing behavior in terms of alternative ways of achieving complete choices in two stages, or alternatively to consider choices as being intrinsically simultaneous (or 'nested') (Birnbaum, 2010; Colman & Stirk, 1999; Hensher, 1994). These choosing modes will be explored empirically in this paper using three illustrative corporate case studies from the United Kingdom (see Sections 4–6), which display a revealing range of rational choosing behavior, including their effects over different time horizons.

Based on the methodology of *stated preferences* (i.e. preferences elicited by direct interviews with individuals, rather than deduced from market data) (Adamowicz et al., 1994; Hensher, 1994; Reid & Smith, 2007a, 2007b; Schipper, 2010), our research obtains UK firms' perceived costs and benefits of adopting financial reporting regimes and techniques by two instruments: an administered questionnaire and a semi-structured interview agenda (Cohen et al., 2002; Wengraf, 2001). From the perceived benefits (B) and costs (C) of adopting regimes and techniques, expressed as perceived utilities and dis-utilities, obtained by these instruments, using Likert scales, companies' net (B − C) and ratio (B/C) utilities of implementing regimes and techniques were calibrated. These net and ratio utilities allow us to examine companies' decision-making in our two-stage choice model of financial reporting regimes and techniques by the development of three illustrative case studies (see Sections 4–6) (Cooper & Morgan, 2008).

### 3.2 | Instrumentation

Our instrumentation builds on research by Reid and Smith (2007a, 2007b) in which the stated preference approach was applied to examine willingness to adopt Financial Reporting Standard for Smaller Entities (FRSSE). In the current context of regimes and techniques, the financial director would be asked, for example, what the *benefit* of a *regime* was on the scale: *N/A*, *zero*, *low*, *medium*, *high* or *extreme*. This is then coded as 0 for *not applicable*, 1 for *zero*, 2 for *low*, 3 for *medium*, 4 for *high* and 5 for *extreme*. Thus, the solution set for net utility (B − C) is {−4, −3, −2, −1, 0, 1, 2, 3, 4}, and the solution set for ratio utility (B/C) is {[0.2, 0.8], 1, [1.25, 5]}. In the case of the former metric, (B − C) > 0 indicates net benefit, and (B − C) < 0 denotes net dis-benefit. For the latter metric, there is benefit if B/C lies in the range {1.25, 5} and dis-benefit if its value lies in the range {0.2, 0.8}.

In this paper, the regimes were considered under the headings of (1) Current (in 2014) and (b) Post 2015 regimes. For current regimes, those that could be chosen were IFRS and UK GAAP. For Post 2015, the regimes that could be chosen were IFRS and New UK GAAP, which replaced the previous UK GAAP from 2015. The above metrics were applied to the choices made over these two classes of regimes in an administered questionnaire that used the Likert scale described in the previous paragraph. This questionnaire (see Appendix S1) had four parts. Part One considered company characteristics (e.g. size, launch date, markets, sector, financial structure, ownership and organization). Part Two considered financial reporting regimes (e.g. current adoption and expected adoption post-2015). Part Three considered financial reporting techniques (e.g. techniques for treating intangibles, development costs and investments). Finally, Part Four considered choice making and choice sequencing over regimes and techniques; the connection between choices on regimes and techniques; and the relative importance of techniques, compared with regimes. All parts of this questionnaire are potentially applicable to our constructions of case studies (see Sections 4–6).

More detailed narrative analysis of choosing modes was accomplished by using, in addition, face-to-face interviews. These used a semi-structured interview instrument with a 3-point agenda: (1) choices of *financial reporting regimes*, with probes on choice, factors in choosing and costs and benefits of choices; (b) choices over *financial reporting techniques*, with probes on the valuing of intangibles (cost, income, market), the treatment of development costs (expenses, assets) and the valuing of investments (market, fair, cost); and (c) the *relation and rationale of choices*, with probes on the relation between the choices over regimes and techniques, staging and decision-making, the reasoning behind decision-making processes. More on the forms of our instrumentation are provided in Appendix S2 and Data S2.

### 3.3 | Sampling

The fieldwork was conducted in the United Kingdom (in 2014), with site visits to the firms analysed in this paper, for face-to-face interviews using a three-part semi-structured interview agenda (see Appendix S2). The firms were a mix of public and private businesses. The person interviewed was always senior, but each could have a different status or role within the firm, for example, Financial Director, Head of Finance, and Company Secretary. For clarity of exposition, we have standardized on using 'interviewee' for all such persons throughout the empirical parts of the paper. Cross-checks with interviewees, post-interview, allowed resolving of facts, anomalies or inconsistencies with the interviewees revealed in fieldwork debriefing. These checks also allowed for requesting further data and narrative from the interviewees to corroborate and/or amplify what was said in the interview. Interview data were supplemented with public domain data to help build contextual material for our case studies. Further, we carried away a considerable volume of internal pamphlets/memoranda/guidebooks/promotional material from each firm, adding to the understanding of their corporate operations. The whole body of data were encrypted for anonymity. We have chosen a judgement sample of the three companies which best represent our taxonomy of *Lex*, *CoLex* and *Nest* (see Sections 4–6). These firms are named (for confidentiality) Companies Alpha, Beta and Gamma, respectively. These are illustrative case studies in vignette form (Yin, 2018). As vignettes, they are not exhaustive, but they are detailed and do give a good flavour of decision processes in real firms, as regards financial reporting choices. Further information on these firms is available in Data S1.

## 4 | PRIVATE COMPANY ALPHA: SEQUENTIAL CHOICES, *LEX* AND *COLEX* ORDERINGS

Company Alpha was a UK-based large private firm, which was family-owned. It was a motor retailer, and it operated other businesses related to motor vehicles, such as repairs and insurances. As a private firm, it had free choice over consolidated accounts and individual accounts. Because its major competitors were public firms, the compulsory adoption of IFRS for public firms' consolidated accounts from 2005 also had an impact on it. Furthermore, the accounting regulators aimed to replace the UK GAAP with the New UK GAAP, including Financial Reporting Standard (FRS) 101 and FRS 102,[1] from 2015. As Company Alpha used UK GAAP for all its accounts at the time of interview, the introduction of New UK GAAP implied that there would have to be some changes in accounting practice within Company Alpha. The changes in accounting regulations were very significant. Therefore, we investigate here how Company Alpha behaved when faced with the major policy changes in financial reporting using two-stage choice modelling for illustration.

### 4.1 | Lexicographic (Lex) ordering

Here, we examine Company Alpha's decision-making process immediately before 2005, this being a time when its main competitors were required to adopt IFRS for consolidated accounts. The interviewee of Company Alpha said that they chose the regime first and then made the technique choices straight after. The interviewee added that under different regimes, techniques would likely alter too. For example, the methods of amortization under various regimes would be distinct. After the company had decided on the regime, the technique choice would follow. This implied that the regime choices would influence the technique choices.

We note that the IFRS were different from UK GAAP in many aspects. When the Company Alpha made its regime choice, it also had to decide what techniques to use. As described by the interviewee, Company Alpha's decision-making process was sequential: Regime choices were made first, followed by technique choices. The interviewee of Company Alpha also argued that some techniques across various regimes were very similar. Summing up, using the concept of preference orderings, we conclude that Company Alpha's choices

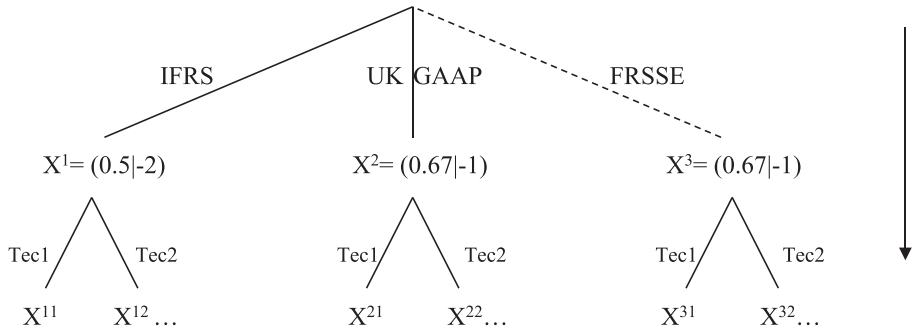
followed the pattern of a lexicographic ordering (Colman & Stirk, 1999; Houy & Tadenuma, 2009). In practical terms, this meant that when it faced regime and technique choices, right before 2005, it first compared available regimes and then chose the one that maximized its utility in this stage, before next choosing its financial reporting techniques. The decision tree of Company Alpha, with relevant adoption utilities inserted from the questionnaire and fieldwork, can be found in Figure 1. This figure shows accurately the main financial reporting *regime choices* (indexed *i*) at the apex, and their respective utilities ($X^i$), using stated preferences. Then going down the pyramid, we show further possible *technique combinations choices*, indexed *j* and represented figuratively rather than literally because they are numerous, and their respective utilities ($X^{ij}$), again just figuratively. In the event, Company Alpha did adopt UK GAAP, which is consistent with it having a higher adoption utility than under IFRS (see Figure 1a). In the parentheses shown in Figure 1, ratio utilities are given first, followed by net utilities. It can be observed that adopting IFRS would lead to a ratio utility (B/C) of 0.5 and a net utility (B − C) of −2. Using UK GAAP and FRSSE both generated better ratio (0.67 > 0.5) and better net utilities (−1 > −2). FRSSE was only relevant to subsidiaries (see Figure 1c).[2] The downward pointing arrow to the right in Figure 1 indicates that the decision-making sequence was from financial reporting regime choices to technique choices. This is the sequential mode of two-stage decision-making.

The interviewee of Company Alpha stated that when determining regimes, it focused on assessing the material needs of preparing financial reports under such regimes. It then chose the simplest financial reporting regime, and this process was typically judgement based, without involving many calculations. Our finding was that UK GAAP was perceived to be easier to use, because it fitted the company's business operations better, and could be explained to shareholders more easily. The interviewee further stated that 'the company is family-run, and looks for simplicity [of operations, including accounting decisions]'. Thus, Company Alpha made the accounting decisions through the above process also because of its simplicity. This fact is in accordance with the interviewee's statement that the ease of execution is important in the choosing process. To conclude, Company Alpha's accounting choices are highly contingent on its ownership form (i.e. its being a family-owned or private firm).

This illustration indicates that the overall simplicity of a financial reporting regime was a crucial positive factor for Company Alpha when it made accounting decisions. Additionally, the interviewee of this company perceived 'there are not too many differences in techniques [across various regimes]'. This comment suggests that the choice of techniques would not weigh so heavily on Company Alpha as would the choice of financial reporting regimes, which would explain why Company Alpha made its decision sequentially. In practice, it first chose a regime and then techniques (as displayed in Figure 1), which is to say its decision-making was lexicographic (*Lex*).

## 4.2 | Co-lexicographic (CoLex) ordering

The context of this subsection is that when the Financial Reporting Council (FRC), the accounting regulator in the UK, required that the New UK GAAP had to replace the UK GAAP, from 1 January 2015, this denied firms like Company Alpha the future use of UK GAAP as a financial reporting regime. This led to a new staged decision for Company Alpha. This happy coincidence, of a new financial reporting regime being heralded during the fieldwork time frame, created a




Note:

(1) Utilities are given in the parentheses. Ratio utilities (B/C) are given first, followed by net utilities (B-C), e.g., for (B/C), $X^1$=0.5 < $X^2$ =0.67 suggests UK GAAP should be chosen.

(2) The arrow indicates the decision-making process is sequential, from regimes to techniques.

(3) The FRSSE is only applicable to subsidiaries' accounts. Hence, the FRSSE alternative is presented using the dashed lines.

(4) Based on the interview data, there is no great difference in techniques across regimes in this case.

**FIGURE 1** Decision tree of UK private company Alpha (until the end of 2014). (a) Utilities are given in the parentheses. Ratio utilities (B/C) are given first, followed by net utilities (B − C), for example, for (B/C), $X^1$ = 0.5 < $X^2$ = 0.67 suggests that UK GAAP should be chosen. (b) the arrow indicates that the decision-making process is sequential, from regimes to techniques. (c) the FRSSE is only applicable to subsidiaries' accounts. Hence, the FRSSE alternative is presented using the dashed lines. (d) Based on the interview data, there is no great difference in techniques across regimes in this case

research opportunity, in that it allows us to explore how Company Alpha, in this new setting, decided on the financial reporting regime and the techniques that it would choose, after the introduction of New UK GAAP in 2015. Under the regulator's new adoption framework, Company Alpha could use IFRS or FRS 102 for consolidated accounts. For individual accounts, it could adopt IFRS, FRS 101 or FRS 102 for individual accounts.

Company Alpha's regime options for different accounts are summarized in Table 2. We see in Table 2 (Columns 2–5) that there were four potential financial reporting regimes (IFRS, FRS 101, FRS 102, FRSSE) that Company Alpha could choose. Their scope in terms of accounting coverage is given in Column 1. Looking at the ticks and crosses in the tabulation of Table 2, we see that IFRS and FRS 102 are more comprehensive than FRS 101, which excludes consolidated accounts. FRSSE is still more exclusive, in that it also excludes the parent company's individual accounts.

To augment the mere denoting of choices in Table 2 with decision-making content, we use Figure 2. This shows the decision tree of Company Alpha from 2015. The arrow on the right pointing upwards suggests a co-lexicographic (CoLex) preference ordering proceeding sequentially from technique choices to regime choices. Ratio utilities and net utilities are given, respectively, in the parentheses of Figure 2. Originally, Company Alpha wanted to adopt FRS 102 for all its accounts, because it found this standard resembled the familiar previous UK GAAP, and was simpler into the bargain, involving less documentation. This suggests that Company Alpha might have preferred the *status quo* when facing changes in regulatory policies (Messier et al. (2014)).

However, Company Alpha decided not to adopt FRS 102 because it found that the technique required for treating incomes under FRS 102 was unsuitable to its current capability. This led Company Alpha to consider using IFRS for consolidated accounts from 2015. Company Alpha also planned to 'use FRS 101 for UK subsidiaries' accounts' from 2015. At the time of our interview, it was 'still evaluating [which of] IFRS or FRS 101 would be [the more] suitable for [the] parent's individual accounts'. This case suggests that if there is a key technique that is critical to the company, the company might switch to another regime just to ensure its use of certain 'beloved' financial reporting techniques. Thus, *technique choices can affect regime choices*.

## 4.3 | Summary on Company Alpha

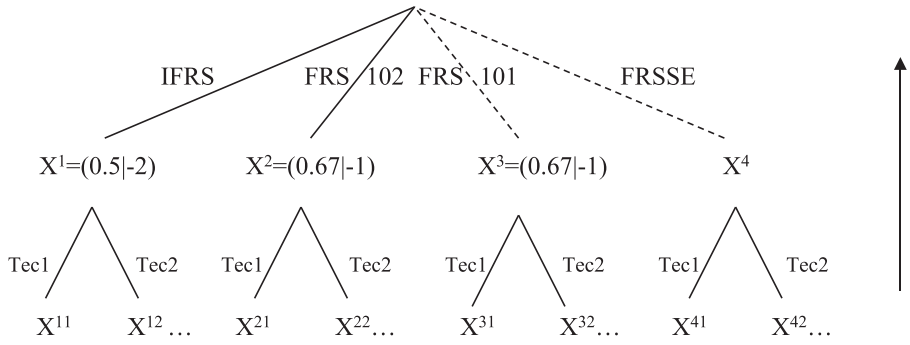
In this illustrative case (see Figure 2), which is specifically related to the regulatory change of 2015, Company Alpha is shown as scrutinizing all options, including financial reporting regime choices and technique choices. However, because one technique was perceived as dominant in its two-stage choice problem, the firm first elected a technique and then made its financial reporting regime choice. Thus, although the decision-making process was indeed sequential, it is distinct from the previous situation near year 2005, which was a *Lex* process. This time, the company's behavior seemed to follow closely a co-lexicographic (*CoLex*) ordering (Dragon et al., 2018). In this new preference ordering of *CoLex*, Company Alpha first compares the utilities of techniques and then decides techniques—ahead of regime choices. This is an important example of both *Lex* and *CoLex* two-stage decision-making occurring in the same firm, but at different points in time.

The case of Company Alpha shows that companies' preference orderings might indeed change across times. Even though a company made financial reporting regime choices and technique choices using the lexicographic ordering previously, it might apply the co-lexicographic ordering later. These diverse outcomes suggest that the relative importance of regime choices and that of technique choices can affect companies' preferences (Birnbaum, 2010; Colman & Stirk, 1999). If a company thinks regime choices have a larger impact than technique choices, it is more likely to apply the lexicographic ordering and make its accounting decisions sequentially, going from regime to technique. On the contrary, if a company is more concerned with technique choices than regime choices, it tends to employ the co-lexicographic ordering in this two-stage choice model. In addition, Company Alpha's decision-making processes were sequential in both cases, with procedures mainly relying on judgement, rather than naked science-like spreadsheet modelling. As indicated by the interviewee of this company, it was simpler for them to make decisions using *staged* and *subjective* approaches (Burmeister & Schade, 2007; Einhorn & Hogarth, 1981).

Regarding the characteristics of the decision-making process, although regulated by relevant authorities to produce financial reports, the company was not under great external time pressure to do so. In this case, time pressure arose mainly from internal rather than external influences, and the company had its own schedule for financial reporting. Reflecting little time pressure, Company Alpha did not regard speed of preparing financial reports as crucial to making accounting decisions. The interviewee said that *ease of execution* was more important than *transparency*. This might be because Company Alpha was a private firm whose financial reports were aimed at internal control rather than at attracting external investors. The flavour of their internal processes was as follows: (1) Decisions were normally made by teams, through group discussion, depending on input from

**TABLE 2** Company Alpha's regime choice for different types of accounts (from 2015)

| Regimes / Choice / Accounts | IFRS | New UK GAAP | | |
|---|---|---|---|---|
| | | FRS 102 | FRS 101 | FRSSE |
| Consolidated accounts | ✓ | ✓ | × | × |
| Parent's individual accounts | ✓ | ✓ | ✓ | × |
| Subsidiaries' individual accounts | ✓ | ✓ | ✓ | ✓ |




Note:

(1) Utilities are given in the parentheses. Ratio utilities are given first, followed by net utilities. The adoption utilities of the FRSSE were not available in this case.

(2) The arrow indicates the decision-making process (viz., from techniques to regimes)

(3) The FRS 101 is only applicable to individual accounts. The FRSSE is only applicable to subsidiaries' individual accounts. Since these two regime choices cannot be used for all accounts, they are presented using dashed lines.

(4) The technique for treating incomes under FRS 102 is unfavorable for this firm.

**FIGURE 2** Decision tree of UK private company Alpha (from 2015). (a) Utilities are given in the parentheses. Ratio utilities are given first, followed by net utilities. The adoption utilities of the FRSSE were not available in this case. (b) the arrow indicates the decision-making process (viz. from techniques to regimes). (c) the FRS 101 is only applicable to individual accounts. The FRSSE is only applicable to subsidiaries' individual accounts. Because these two regime choices cannot be used for all accounts, they are presented using dashed lines. (d) the technique for treating incomes under FRS 102 is unfavourable for this firm

the financial director and the expertise and knowledge of others. (2) The company discussed important accounting issues with its own internal accountants. It measured risks subjectively, rather than modelling them explicitly (e.g. calculating expected values in a spreadsheet). (3) The weather and the economic environment had a heavy influence on their sales of vehicles, which were the major risks to their cash flow. (4) The company tried to use its size to diversify its risk. It found that diversifying risk reduced the complexity of the organization. (5) Playing to the professional backgrounds of employees and seeking simplicity were significant to Company Alpha's decision-making processes. (6) Overall, we observed that being a private firm had a major influence on how Company Alpha prepared financial reports and engaged in decision-making: Clearly, organizational form counts for a lot.

## 5 | PUBLIC COMPANY BETA: NESTED CHOICE

We turn now to Company Beta, a public company, as being illustrative of a firm that had a nested choice mode (*Nest*). As opposed to private firms, like Company Alpha, which enjoy freedom of choice for all accounts, publicly listed firms, like Company Beta, must adopt IFRS for consolidated accounts. Public firms can only choose regimes for *individual accounts* freely. In focusing on public Company Beta, we aim to examine whether the difference in incorporation translates into any difference in their choice behavior.

Company Beta is a manufacturing firm in the pharmacy industry. It is a medium-sized public firm located in the UK. Our main interviewee for Company Beta said that the essence of their choosing process depended on whether the adoption was 'compulsory' or 'more a matter of voluntary change'.

If adoption of a regime is compulsory, as in the mandatory adoption of IFRS for consolidated accounts, a company will go directly from the required regime adoption to choosing a technique to support it. In this situation (i.e. a tied choice), the decision-making process is necessarily sequential, because the regime choice has been made (albeit involuntarily) and the company can then only choose from techniques that support the given regime. Nevertheless, Company Beta differs from Company Alpha, which also used a staged decision-making process and made accounting decisions sequentially, when the time approached the year 2015, in that Company Beta was forced to make the regime choice first.

Arguably, complying with regulations dominates the two-stage choice problem. Thus, it was more important to Company Beta's decision-making that it has no option other than to adopt the required regime than it is for them to be able to choose the technique that best supported it. Because Company Beta mandatorily adopted IFRS as its regime for consolidated accounts, necessarily before it considered technique choices, this firm must be regarded as displaying a *Lex* ordering. Similarly, for firms like Company Alpha, if the importance of regime choices is clearly greater than that of technique choices, the company will apply the lexicographic ordering and will make its financial reporting choices sequentially.

In the previous paragraph, it was argued that the preference ordering of Company Beta was lexicographic. This means that the firm compared utilities of regimes and chose the one with the highest net utility before considering technique choices. One important counterfactual question to pose here is: What if Company Beta perceived higher utility in adopting other regimes rather than implementing IFRS? Under these circumstances, even though companies are forced to make accounting decisions sequentially, it cannot be assured that firms will always adopt IFRS. One proposed explanation for compliance would be that regulations as such will influence a company's

utility of accounting modes. For instance, if companies do not comply with laws, they will face substantial costs and risks, such as fines or the cancellation of business operations (e.g. compulsory liquidation). Knowing this, they will adjust their utilities accordingly. Regardless of firms' original unbounded preferences towards financial reporting modes, restrictions that are embodied in the laws governing financial reporting might themselves transform utilities. That is, there is a kind of endogeneity here, in that the accounting modes that firms are required to use might generate the highest adoption net utility *after companies have already weighed in the balance the disadvantage of violating laws*. Hence, it could be argued that Company Beta rationally applied the lexicographic ordering in its two-stage accounting choice problem, and, in doing so, its utilities were affected by the laws/regulations.

From another perspective, this illustrative case study shows that the two-stage choice model of financial reporting regimes and techniques might be reduced to a one-stage choice problem when firms' choices are limited. Because of mandatory IFRS adoption, Company Beta had only one option of financial reporting regime. At that time, it only had choices over techniques. Hence, the accounting choice problem that it faced became a one-stage choice.

Notwithstanding this, it is worth investigating, as a thought experiment, how Company Beta would behave were it to have free choices and asking whether the firm would make accounting choices differently, compared with the situation of tied choices. Given this kind of question was broached in our interviews, the interviewee asserted that were Company Beta to have had a free choice of regimes and techniques, it would have looked at financial reporting regime choices and technique choices *together* and made its decision using a *nested* process (rather than *Lex* or *CoLex*). The interviewee explained that this was so because regime choices and technique choices were perceived as being tightly linked. Hence, using the nested decision-making process would be more appropriate were Company Beta to have completely free choices.

To expand on the kind of thought experiment mapped out, and tested, as in the previous paragraph, we can report that the interviewee of Company Beta maintained that technique choices were crucial to assessing regime choices. Thus, when evaluating accounting modes, this company would examine all options available and would investigate how they influenced financial reporting. This finding resembles that for Company Alpha, which looked at all choices, at the time when it was facing the prospective policy changes from year 2015. Company Alpha applied a sequential decision procedure and made its technique choices first because it had prioritized using a certain technique.

However, the interviewee of Company Beta stated that the company preferred to make nested decisions when it had free regime choices. The way Company Beta made accounting decisions for individual accounts, near to year 2005, provides a good example of a nested choice. Although Company Beta was required to adopt IFRS for consolidated accounts from 2007, it could freely choose IFRS or UK GAAP for individual accounts. The interviewee stated that investors preferred the company to adopt IFRS, as doing so could enhance the firm's comparability within the industry. Moreover, the interviewee pointed out that the company preferred the treatment of intangibles under IFRS to that under UK GAAP. These remarks reveal that Company Beta not only looked at costs and benefits of using techniques but also studied those costs of adopting different regimes per se. These results suggest that Company Beta considered regime choices and technique choices simultaneously and followed an un-staged (i.e. nested) decision-making process.

To advance the investigation further, we asked our interviewee whether they thought the un-staged process and the staged process would result in the same, or different, choice patterns. They replied that it depended on the importance of choices, because final decisions must meet the strategic goals of the company. This comment matches our early argument in this article—that the relative significance of technique and regime choices will themselves play a role in determine companies' preference orderings and their decision-making processes.

Figure 3 shows the decision tree of Company Beta, which consists of two regime choices (i.e. IFRS and UK GAAP) and different alternatives of technique combinations under each regime. In this choice problem, Company Beta has various options, such as $X^{11} = (1.5|1, x_{11})$ and $X^{21} = (1|0, x_{21})$. The double arrow to the right indicates that, in this example, the decision-making process of Company Beta is *nested*.

The following paragraphs apply the theoretical concepts mentioned in Section 2 to formalize the nested choice process. If a company's choice is $X^{ij}$, it means that the firm chooses regime $i$, which brings the utility $x_i$, and technique combination $j$ of this regime, which generates the utility $x_{ij}$. Unlike companies that deploy sequential decision-making processes (i.e. only compare $x_i$ or merely compare $x_{ij}$ in the first instance), a firm using a nested process will consider *all* utilities of regimes and techniques together. Hence, the firm's utility function of a joined accounting mode could be formally presented as $u(X^{ij}) = f(x_i, x_{ij})$. The company will assign weights to various accounting choices, including both regimes and techniques. The weights reflect the importance of these choices and influence the company's adoption utilities. The firm will choose the accounting alternative that leads to the maximum combined utility of the regime and the techniques. For example, this company will elect the accounting mode $X^{12}$ (Regime 1 and Technique Combination 2) if the utility of mode $u(X^{12})$ is higher than $u(X^{11})$, $u(X^{21})$ and $u(X^{22})$. That is, Regime 1 and Technique Combination 2 yield the highest utility than other joint options.

With regard to the utility function, it should be noted that firms often pay more attention to those forms of financial reporting that help them to achieve their corporate goals. Firms have their own specific goals to meet, and the significance of each goal varies. Therefore, we would expect individual firms to prioritize accounting choices differently, resulting in diverse preferences and utilities towards accounting modes, being observed in our fieldwork sample.

The above utility function can be applied to explain the nested choice of Company Beta. When Company Beta had free choices, it also considered regime choices and technique choices together and chose the financial reporting mode with the maximum joint utility. Its final decisions depended on its goals and priorities, and this is concordant with the interviewee's statement that the importance of the company's goals were significant determinants of whether (or not) a

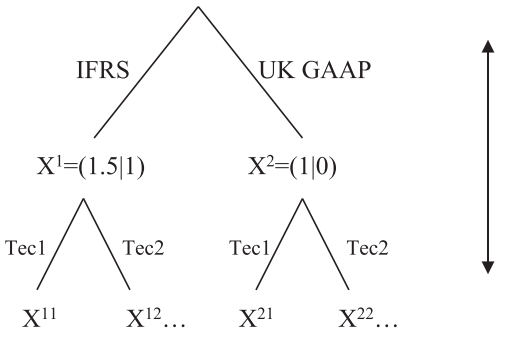



**FIGURE 3** Decision tree of UK public company Beta (individual accounts, until the end of 2014). (a) Utilities are in parentheses. Ratio utilities (B/C) first and then net utilities (B − C), for example, $X^1 = 1.5 > X^2 = 1$ in terms of B/C, and $X^1 = 1 > X^2 = 0$ in terms of (B − C) indicate that IFRS should be chosen over UK GAAP. (b) the double arrow indicates that this is a nested decision-making process

Note:

(1) Utilities are in parentheses: ratio utilities (B/C) first, then net utilities (B-C), e.g., $X^1 = 1.5 > X^2 = 1$ in terms of B/C, and $X^1 = 1 > X^2 = 0$ in terms of (B-C) indicate that IFRS should be chosen over UK GAAP.

(2) The double arrow indicates that this is a nested decision-making process.

staged process or an un-staged process would lead to the same accounting choices.

The above suggests that when financial reporting regime choices dominate the entire choice problem, companies are inclined to apply *Lex* orderings. When technique choices are highly important compared with financial reporting regime choices, firms' preferences are more likely to be *CoLex*. Compared with the firms that have *Lex* or *CoLex* orderings, the companies that make decisions using un-staged (viz. nested) processes might have had less clear ideas about the relative significance of their goals. For instance, Company Beta might understand its goals well and have several crucial targets to accomplish. However, the relative importance of these goals to Company Beta might not be so obvious and might be difficult to judge. Therefore, Company Beta made financial reporting regime choices and technique choices simultaneously. Using the un-staged process also allowed Company Beta to accommodate various key aspects of corporate goals and thereby to achieve an overall better outcome.

The interviewee of Company Beta mentioned that when assessing accounting forms, it was important that the results met the expectation of the finance committee and the board. Thus, it could be inferred that the company gave more weight to those accounting modes that satisfied the board and the committee. Furthermore, this interviewee indicated that Company Beta used the un-staged procedure to make accounting decisions because of its unique business operations. For Company Beta, the emphasis was on the whole organization, rather than on any parts of it. Thus, decisions typically were not only about accounting but about how the entire company was run, of which just one aspect was accounting. This explanation also suggests that the nested decision-making process adopted by Company Beta helped it to find better solutions, in general, by viewing all decisions within the context of the health of the entire company.

In terms of attributes during the choice process, the interviewee of Company Beta said that there was always time pressure. Nonetheless, the interviewee said that the schedule was almost the same for every year, so in that sense was predictable. The interviewee added that it is a very complicated process to interpret regulations properly and to fully understand how the regulations influence the company. Certain accounting procedures, such as those for the treating of intangibles and acquisitions, were found to be especially difficult to implement and understand. The interviewee said that these complexities slowed down the decision-making process. Because it is essential to meet deadlines and to have accurate financial reports, Company Beta tended to look for help from external experts, who assisted the company in making decisions quickly and professionally. Moreover, the interviewee indicated that the company preferred more evidence, rather than less, to make decisions and to conduct a thorough analysis. Hence, most of the time, they did have 'to hand' the relevant data to support decisions. If they had to make decisions relatively quickly, they did so by judgement based on previous experiences (Burmeister & Schade, 2007; Einhorn & Hogarth, 1981). If the time for making decisions was extremely limited, they would sometimes use intuition. By contrast with Company Alpha, which often made decisions subjectively and cared more about the ease of execution, Company Beta used more decision support, with the aim of fostering precise financial reporting.

Furthermore, Company Beta did not like uncertainty. It preferred alternatives that were more certain. Its major risk was with the product market, which was prone to shifting sands commercially. To attenuate this risk, Company Beta conducted a lot of product forecasting and looked carefully at market dynamics. It used devices like risk classes and scenario analysis to assist in handling these risks. Company Beta made accounting decisions by both teams and individuals. Key decisions went through the boards, and others were determined by the finance director and CEO.

Unlike Company Alpha, which depended on employees' judgements to measure risks and to choose accounting modes, Company Beta tended to require more visible evidence to support its decisions (cf. March, 1987). Such supporting information was also useful to Company Beta in applying an un-staged decision-making process, which aimed to accommodate various key aspects of the entire firm's operations.

## 6 | PUBLIC COMPANY GAMMA: NESTED CHOICE

This section examines the decision-making process of another public firm, Company Gamma, in confronting its two-stage choice problem of financial reporting. Company Gamma was a medium-sized UK service company that supplies property-related solutions. As a publicly listed firm, Company Gamma did not have regime choices for consolidated accounts: It was only able to adopt IFRS. Hence, like Company Beta, Company Gamma elected the regime first and then made its technique choices. Company Gamma also applied a sequential decision-making process, albeit reluctantly, when choices were tied. As with Company Beta, it could be said that the laws of mandatory IFRS adoption influenced Company Gamma's perceived utilities of regimes. In terms of the metrics we have adopted (viz. ratio and net utilities), regardless of its original unconstrained preferences towards various financial reporting regimes, for Company Gamma, it was IFRS that led to the highest utility when the company took accounting regulations into account. It can also be seen that the two-stage choice model contracts to a one-stage choice problem because of Company Gamma's compulsory adoption of IFRS.

As contrasted with the 'tied' choices for consolidated accounts, Company Gamma's accounting choices for *individual* accounts allowed free choices over both regimes and techniques. It could adopt IFRS or UK GAAP as the regime for both its parent's individual accounts and their subsidiaries' individual accounts. The interviewee of Company Gamma explained that the company considered technique choices and regime choices *simultaneously* when faced with completely free choices. Hence, it used an un-staged process to make decisions. The decision tree of Company Gamma is shown in Figure 4 where the double arrow indicates a nested decision-making process.

This situation mimics how Company Beta responded to free choices, as mentioned in the Section 5. The utility function of a combined financial reporting mode, $u(X^{ij}) = f(x_i, x_{ij})$, is relevant to the case of Company Gamma. Here, as before, the *i* subscript refers to regime, and the *j* subscript refers to technique. When it faced the free choices for individual accounts, Company Gamma chose the joint regime and technique mode $X^{ij}$, which generated the maximum utility $u(X^{ij})$. The chosen accounting mode $X^{ij}$, consisting of the regime utilities $x_i$ and the technique utilities $x_{ij}$, was expected to achieve, overall, better outcomes for Company Gamma because it evaluated regimes and techniques at the same time. The weights that Company Gamma assigned to various accounting choices were said to be influenced by its goals and affected the form of its utility function.

The interviewee mentioned that individual accounts were perceived to be less important than consolidated accounts. Therefore, when Company Gamma was determining which accounting forms were best for its individual accounts, its criteria focused, first, on their *ease of execution* and, second, on their *credibility*—that is, it required that its financial reporting results should be perceived by its stakeholders to be reasonable. Furthermore, the interviewee pointed out that Company Gamma generally judged the benefits of various accounting modes *subjectively*. He also thought that regime choices and technique choices influenced each other mutually and were intrinsically linked. In addition, because regimes were converging and there was beginning to be no great difference among different regimes, we were told that Company Gamma did not examine choices in detail or in stages. Under these circumstances, it was easy to make decisions by the un-staged (viz. *Nest*) process. Using the un-staged procedure is consistent with Company Gamma's intention to complete tasks easily, with no downside on credibility.

We note that both Company Alpha and Company Gamma thought that the ease of execution was especially important during the decision-making process. Despite this concordance, Company Alpha applied the staged process, whereas Company Gamma used the un-staged process, when free choices could be made on financial reporting. As discussed in Section 4, Company Alpha determined that certain regimes or techniques were much more favourable than others. Nevertheless, Company Gamma felt, per contra, that formally distinct accounting standards were in fact very similar. These disparate outcomes suggest that if a business such as Company Alpha was eager to achieve the goal of choosing a specific accounting form,

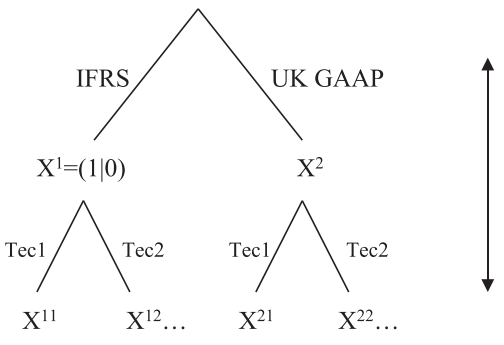



**FIGURE 4** Decision tree of UK public company Gamma (individual accounts, until the end of 2014). (a) Utilities in parentheses. Ratio utilities (B/C) given first, followed by net utilities (B − C), after the bar. The adoption utilities of UK GAAP were not available in this case. (b) the double arrow indicates that this was a nested decision-making process

Note:

(1) Utilities in parentheses. Ratio utilities (B/C) given first, followed by net utilities (B-C), after the bar. The adoption utilities of UK GAAP were not available in this case.

(2) The double arrow indicates this was a nested decision-making process.

which resulted in regime choices being much more significant than technique choices (or vice versa), it would apply a sequential decision-making process. By contrast, a firm like Company Gamma would tend to use a nested procedure to make decisions, if its various available accounting modes were of almost the same utility and its regime and technique choices too were almost of equal importance.

When it came to the process of decision-making and how it is developed, the interviewee of Company Gamma said that its decision-making process was mainly judgement based (cf. Bonner (1999)), but with certain levels of procedure support, including financial computation and scenario analysis. Both Company Alpha and Company Gamma looked for ease of execution during the decision-making process, and both tended to make decisions subjectively. Differing, to a degree, from Company Alpha, Company Gamma's decision-making process was sometimes based on procedures that provided enhanced information for decision-making. Using a nested decision-making process (*Nest*) means that companies considered regimes and techniques together and they tried to accommodate all aspects of accounting choices. In this situation, numerical data and other practical forms of evidences would be helpful to companies for making decisions. Thus, interviewees for Company Gamma and Company Beta, which both made choices simultaneously when facing free choices, also both reported using supporting data to some extent in determine their accounting modes.

Further, the interviewees of Company Beta and Company Gamma both stated they had to be sure that the results of financial reports met shareholders' expectations, when they evaluated accounting modes. Although the interviewee of Company Alpha mentioned shareholders as having an impact on accounting choices, it seemed this firm focused more on the ease of execution, and on simplicity, during the decision-making process than on pleasing shareholders. One explanation for this difference might be the fact that Company Alpha was a private firm. However, Company Beta and Company Gamma, both of which were public firms, would probably have as much, or more, pressure from investors.

Additionally, the interviewee of Company Gamma indicated that transparency and compliance were very important when preparing financial reports. Financial reports also needed to be prepared and completed quickly. This focus of transparency might also be related to the company's public character. In terms of the characteristics in the decision-making process, the interviewee felt that the decision-making process was not complicated, because all financial reporting standards are converging. Only some parts, like financial instruments, foreign exchanges, and judgemental aspects, were, to them, particularly difficult. Moreover, they mentioned that the risk and the uncertainty (most of which come from transactions) would influence significantly the decision-making process. Company Gamma often used risk classes to calibrate degree of risk. The interviewee also stated that only during the period of transitioning to IFRS would Company Gamma come under time pressure. Because the process to prepare financial reports had become routine, Company Gamma had not often been subject to time pressure. Company Gamma also participated in educational training for staff to update their knowledge on accounting regulations and to discover what the necessary changes were.

Company Gamma usually had enough information to make rational decisions (cf. Simon (1979)). The 'auditing company is the safe line', the interviewee said. The auditing company itself provided the latest information about financial reporting laws. Company Gamma consulted the auditing firm about what it should do in response to current changes in accounting policy. Considering Company Gamma's relatively small firm size, it seemed that auditors had a crucial impact on the choice outcomes of this company.

## 7 | FURTHER DISCUSSION

This article has developed a theoretical framework for analysing the choices made by firms confronted with options on financial reporting regimes and the techniques that support regimes. This framework uses a two-stage decision model, which distinguishes between lexicographic (*Lex*) and co-lexicographic (*CoLex*) decision modes (Colman & Stirk, 1999; Dragon et al., 2018; Houy & Tadenuma, 2009) and allows a nested alternative to both (*Nest*). The underpinning of this model is a subjective utility-based view of decision-making, which allows a calibration of preferences over regimes and techniques. The utility metric is based on a 'stated preference' approach (Adamowicz et al., 1994; Hensher, 1994; Reid & Smith, 2007a, 2007b; Schipper, 2010), which allows the evaluation of alternatives in *ratio utility* (B/C) or *net utility* (B – C) terms. Using an administered questionnaire and a semi-structured interview agenda, interviews with financial directors were undertaken. These were conducted with firms in the United Kingdom and aimed to show what this two-stage model of regimes and techniques could reveal in realistic decision settings. Our interview instrument allowed the calibration of utilities experienced in our two-stage decision model. This was used to generate primary-source fieldwork data, explore how companies behave within a two-stage choice model and provide indications of stated preferences over regime and technique choices.

In brief, we investigated whether firms made decisions in stages, or all at once, when facing choices across both regimes and techniques (Birnbaum, 2010; Colman & Stirk, 1999; Hensher, 1994). If they determined the form of accounting reporting in stages, we asked them whether they dealt with the regime choice first or the technique choice first. The theoretical underpinning to our paper was developed through a formal model, as explained in Sections 1 and 2. This was elaborated with three case study vignettes (Companies Alpha, Beta and Gamma), with supporting graphics and narratives in Sections 4, 5 and 6, respectively, in which three alternative decision-making modes were displayed by decision tree graphics based on the elicited 'stated preferences' of companies (Adamowicz et al., 1994; Hensher, 1994; Schipper, 2010).

A consistent form of analysis was applied to all three case studies: Companies Alpha, Beta and Gamma. These were composed of one private firm and two public firms. We found that the private firm (Company Alpha) had faced free choices for both consolidated accounts and individual accounts. By contrast, the two public firms (Companies Beta and Gamma) were found to have 'tied' choices for consolidated accounts but were at liberty to choose their accounting modes for individual accounts.

When facing free choices, the three firms applied different decision-making processes. Company Alpha made accounting decisions in stages, but Companies Beta and Gamma determined *both* financial reporting regimes and techniques simultaneously. The case of Company Alpha revealed that this firm had found a certain regime to be very favourable near the year 2005 and it was eager to adopt a specific technique when facing the subsequent policy change from the year 2015 onwards. For Company Alpha, the relative importance of regime choices and technique choices was obvious. Hence, it used the sequential decision-making process (Birnbaum, 2010; Colman & Stirk, 1999). Moreover, these findings imply that when regime choices dominate the entire choice problem, companies tend to choose the regime before making technique decisions, as happened to Company Alpha near the year 2005. In this situation, the behavior of firms can be explained by *Lex* orderings, which apply to companies that compare the utility of regimes first, when facing the two-stage choice problem of financial reporting regimes and techniques. In contrast, near the year 2015, when technique choices were becoming much more important than regime choices, Company Alpha said it would elect to choose the technique first. Their preference orderings would accordingly be re-classified as *CoLex*, because they now wished to prioritize the utility of techniques over that of regimes. The case of Company Alpha, while making accounting decisions near to the end of year 2015, provides a good example of the dynamics of shifting from a *Lex* to a *CoLex* ordering.

Confronted with free accounting choices, Company Beta and Company Gamma applied the *nested* decision-making process (Hensher, 1994; Tu & Goldfinch, 1996). Company Beta aimed to take all key aspects into account when making decisions. The nested decision-making process helped Company Beta to have a better outcome for the whole organization. For Company Gamma, there was no large difference (e.g. in techniques) across different regimes. Hence, it was unnecessary for the firm to examine accounting modes in detail or in stages: It was easier to make decisions simultaneously. Our empirical analysis shows that Companies Gamma and Beta did not perceive clear distinctions between the significance of regime choices and of technique choices. This is probably the reason why they adopted the nested decision-making process, rather than the sequential process of *Lex* or *CoLex*.

When companies make decisions by using un-staged processes (viz. *Nest*), they consider regime choices and technique choices at the same time. They will choose that financial reporting form which leads to the best result for them (i.e. the maximum utility) when various crucial aspects have been considered, including regimes and techniques. Their utility functions can be expressed as $u(X^{ij}) = f(x_i, x_{ij})$, whose form is associated with companies' priorities in financial reporting (e.g. the relative importance of regime and technique choices). As mentioned by the interviewee of Company Beta, it is companies' goals that will determine whether the nested and the sequential decision-making processes can result in the same accounting pattern.

Comparing Company Beta and Company Gamma, they both had tied choices when preparing financial reports for consolidated accounts. As public firms, they could only use IFRS as the regime for consolidated accounts. Thus, compulsory IFRS adoption forced public companies to elect the regime before they could choose techniques. In a sense, they applied the staged decision-making process involuntarily. In addition, regardless of companies' original utilities of adopting various financial reporting regimes, IFRS yielded the highest adoption utility after they took account of the substantial costs of violating the laws. Our results show that regulation can transform firms' utilities of accounting modes. Thus, we have companies adopting IFRS, which generated a better utility in the first stage of the choice problem. On the other hand, it could be said that the two-stage choice model will be reduced to a one-stage choice problem when choices are tied. Because of mandatory IFRS adoption, public firms only have technique choices and face a one-stage accounting choice problem.

Furthermore, our case studies suggest that the decision-making process will change over time. As discussed in Section 4, Company Alpha applied a lexicographic (*Lex*) ordering near 2005 but then wished to use a co-lexicographic (*CoLex*) ordering later (near 2015). The alteration in Company Alpha's preference orderings resulted in a new decision appraisal, changing the relative significance of regime choices and technique choices across time.

The results reported here also show that firms adopted different decision styles in evaluating accounting modes. For instance, Companies Alpha and Gamma both tended to decide upon financial reporting modes subjectively, because they sought ease of execution. In contrast, Company Beta preferred to decide between accounting alternatives with the help of more tangible evidence (cf. Bruns, 1968; O'Reilly, 1983). Company Gamma also used numerical data and scenario analysis, as necessary, to help its decision-making. It should be noted that both Companies Beta and Gamma applied the *nested* decision-making process when confronted with free accounting choices. In the *nested* case, when companies make decisions simultaneously, they need to consider *all* key aspects at the same time. In this situation, supporting data (e.g. by scenario analysis) can be very helpful (March, 1987). Therefore, it is no surprise that both Companies Beta and Gamma liked to have such supportive data when making reporting decisions, even if this requires using more resources.

## 8 | CONCLUSION

This paper makes four key points. First, there is clear evidence of both *Lex* and *CoLex* two-stage decision-making, both across firms and within firms. Second, choice can be partly driven by regulatory matters and the laws that embed them institutionally. We find that *tied* choices are ubiquitous. This is partly because, in the decision framework we are examining, regulations have a heavy impact on the perceived utilities of financial reporting regimes and techniques. Third, we find that, in practice, there are diverse strategic styles underpinning decision modes when it comes to deciding which financial reporting regime and associated techniques to adopt. Some are highly subjective, and others much more quantitatively driven. Fourth, and finally, we find that if a firm is bold enough to dispense with two-stage decision-making, choosing to act simultaneously rather than

sequentially, by adopting the *nested* mode, this is not without cost. It will typically exact the penalty of have higher data requirements for decision-making, for example, in terms of its volume, timeliness, scope and detail.

To conclude, decision support system (DSS) is a rapidly developing research area, with both interdisciplinary and multidisciplinary dimensions. Our paper emphasizes its relevance to applied microeconomics, managerial economics and accounting: all in the context of decision support. Its scope goes far beyond this. For example, Brauner et al. (2019) have emphasized the attribute of 'robustness to error', which is in a kind of trade-off with usability, in DSSs. Power and Reid (2018) look to advance research through solving optimum choice problems of a firm within a 'real options' framework by using easy-to-understand three-dimensional 'heat map' where hot (red) is good and cold (blue) is bad, performance-wise. Further, Martins et al. (2019) highlight the value of DSS development as a business education tool, which they illustrate by the evaluation of competing business projects, with different dimensions like price, potential and product viability. Truly, the DSS approach is a dynamic progressive research agenda, with clear opportunities for new work in managerial and decision economics. Future research may also apply the two-stage decision-making model proposed in this paper to other managerial decisions.

## ACKNOWLEDGEMENTS

We have benefitted from numerous inputs in developing the project on which this paper depends. We should particularly mention Professor Geoff Meeks (Judge Business School, Cambridge University), Professor Katherine Schipper (Fuqua School of Business, Duke University), Professor Pauline Weetman (Edinburgh University Business School) and Dr Julia Smith (Strathclyde University Business School), whose various influences and inputs have been very helpful. We have benefitted from the groundwork (on financial reporting modes and choice modes in accounting), established by work conducted under grants from the ESRC and the Carnegie Trust for the Universities of Scotland. We would also like to thank all participants at the 41st Annual Congress of the European Accounting Association (2018 EAA) and at the 2018 Annual Conference of British Accounting and Finance Association (BAFA) for helpful suggestions on this paper. For all these influences, we are grateful, but as authors we take full responsibility for our own work and accept responsibility for any errors of omission or commission it may contain. Finally, we thank gratefully all interviewees who voluntarily participated in this study. This paper is part of a larger project supported by the Carnegie Trust for the Universities of Scotland. We gratefully acknowledge the funding support of the Carnegie Trust for the Universities of Scotland that allowed us to conduct fieldwork from which the results of this paper were drawn.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are not publicly available due to privacy and ethical restrictions. However, complete research instrumentation and further information on the data are available in the appendixes and supplementary material of this article.

## ENDNOTES

[1] FRS 101 is 'Reduced Disclosure Framework', which was designed to be consistent with IFRS but with a reduced disclosure level. FRS 102 is the 'Financial Reporting Standard Applicable in the UK and Republic of Ireland', which combined UK GAAP, IFRS and IFRS for small and medium-sized entities (IFRS for SMEs).

[2] For some of its subsidiaries, which were relatively small, use of FRSSE was possible. However, to maintain consistency within the group, Company Alpha used UK GAAP for all accounts.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

**How to cite this article:** Hsu Y-L, Reid GC. Two-stage decision-making within the firm: Analysis and case studies. *Manage Decis Econ*. 2021;42:1355–1373. https://doi.org/10.1002/mde.3317

## APPENDIX A.

**Questionnaire**

Section 1. Basic company information

Numbers recorded do not have to be exact. If you do not know the exact number, provide your best estimate.

1.1 What is your firm size

| **Employees** | _____ | **Annual turnover (£)** | _____ |
|---|---|---|---|
| Balance sheet total (£) | _____ | Total assets (£) | _____ |

1.2 When was your firm founded? _____

1.3 What is the geographical distribution of sales you make and costs you incur?

| | **Local** | **UK** | **Europe** | **World** |
|---|---|---|---|---|
| Sales (%) | _____ | _____ | _____ | _____ |
| Costs (%) | _____ | _____ | _____ | _____ |

1.4 What is your annual growth rate of sales? _____

1.5 What is your annual R&D expenditure? (£) _____

1.6 What is your P/E ratio? _____

1.7 What is your industrial or service sector? (please choose from the list of SIC codes on next page) _____

1.8 What is ownership of your company? (%)

| | | |
|---|---|---|
| Insider _____ (e.g. management) | Institutional _____ (e.g. mutual funds) | Other _____ |

1.9 What is your leverage?

| Total asset/equity | _____ | Liability/equity | _____ |
|---|---|---|---|

1.10 How well do these describe features of your organization structure? (please circle)

| **Your use of teamsto make decisions is:** | **Zero\|Low\|Medium\|High\|Extreme** |
|---|---|
| The authority you give to individuals to make decisions is: | Zero\|Low\|Medium\|High\|Extreme |
| Your use of hierarchy for salaries is: | Negligible\|Low\|Medium\|High\|Extreme |
| Your use of hierarchy in organizational structure is: | Negligible\|Low\|Medium\|High\|Extreme |

SIC Codes

| **SIC code** | **Sectors** |
|---|---|
| 01–09 | Forestry, fishing and mining |
| 10–30 | Heavy manufacturing |
| 31–44 | Light manufacturing and construction |
| 45–58 | Wholesale and retail trades |
| 59–83 | Professional and financial services |
| 84–99 | Public, private and social services |

Section 2. Financial reporting regimes

2.1 Current adoption

2.1.1 Current choice of financial reporting regime

2.1.1.1 What types of financial reports do you prepare? (please circle *all* items applicable to you)

2.1.2 A member of a group: consolidated accounts|parent accounts|subsidiary account

Not a member of a group: individual accounts

2.1.1.2 What are the financial reporting regimes you could choose? (please circle *all* regimes available to you)

2.1.3 IFRS|UKGAAP|FRSSE|Other _____

Please further explain available regimes for different accounts, if your available regimes are different for different accounts (consolidated accounts, parent accounts, subsidiary accounts) _____

_____

2.1.1.3 What is your current financial reporting regime? (please circle)

2.1.4 IFRS|UKGAAP|FRSSE|Other _____

When did you adopt it? _____

Please further explain adopted regimes for different accounts, if you adopt different regimes for different accounts (consolidated accounts, parent accounts, subsidiary accounts) _____

_____

At the point of adoption, what were your perceived adoption **costs**? For regimes that you could have chosen but you did not, what were your perceived adoption costs at that time? (please circle)

| **IFRS** | **N/A\|Zero\|Low\|Medium\|High\|Extreme** |
|---|---|
| Current UK GAAP | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| FRSSE | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the regime is not available to you.

At the point of adoption, what were your perceived **benefits**? For regimes that you could have chosen but you did not, what were your perceived adoption benefits at that time? (please circle)

| IFRS | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Current UK GAAP | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| FRSSE | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the regime is not available to you.

2.2 Expected Adoption

2.2.1 Expected choice of financial reporting regime

2.2.1.1 Is your firm entitled to adopt new UK GAAP from 2015? (please circle)

No (Go to Section 3)|Yes

2.2.1.2 What are the chances that you will adopt the following from 2015? (please circle)

| IFRS | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| New UK GAAP-FRS 101 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| New UK GAAP-FRS 102 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| FRSSE | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the regime is not available to you from 2015.

Please further explain expectedly adopted regimes for different accounts, if you may adopt different regimes for different accounts (consolidated accounts, parent accounts, subsidiary accounts) _____-
_____-
_____

2.2.2 What is your expected **cost** of adopting the following financial reporting regime from 2015? (please circle)

| IFRS | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| New UK GAAP-FRS 101 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| New UK GAAP-FRS 102 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| FRSSE | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the regime is not available to you from 2015.

2.2.3 What is your expected **benefit** of adopting the following financial reporting regimes from 2015? (please circle)

| IFRS | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| New UK GAAP-FRS 101 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| New UK GAAP-FRS 102 | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| FRSSE | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the regime is not available to you from 2015.

Section 3. Financial reporting techniques

3.1 Choices of financial reporting techniques

3.1.1 Intangibles

3.1.1.1 Which method(s) could you choose for valuing **intangibles**? (please circle)

| Cost approach | \|Market approach |
|---|---|
| Income approach | \|Other _____ |

3.1.1.2 Of method(s) circled in 3.1.1.1, which do you actually use for valuing **intangibles**, and what is its/their importance? Circle those boxes that apply and then rank them in order of importance, putting 1, 2, etc. in the relevant boxes, where 1 is the most important.

| ☐ Cost approach | ☐ Market approach |
|---|---|
| ☐ Income approach | ☐ Other _____ |

3.1.2 Development costs

3.1.2.1 Which method(s) could you choose for treating **development costs**? (please circle)

| Recognize them as expenses | \|Recognize them as assets |
|---|---|
| Recognize them as other (please specify) _____ | |

3.1.2.2 Of method(s) circled in 3.1.2.1, which do you actually use for treating **development costs**, and what is its/their importance? Circle those boxes that apply and then rank them in order of importance, putting 1, 2, etc. in the relevant boxes, where 1 is the most important.

| ☐ Recognize them as expenses | ☐ Recognize them as assets |
|---|---|
| ☐ Recognize them as other _____ | |

3.1.3 Investments

3.1.3.1 Which method(s) could you choose for valuing your **investments**? (please circle)

| Market value | \|Cost approach |
|---|---|
| Fair value | \|Other _____ |

3.1.3.2 Of method(s) circled in 3.1.3.1, which do you actually use for valuing your **investments**, and what is its/their importance? Circle those boxes that apply and then rank them in order of importance, putting 1, 2, etc. in the relevant boxes, where 1 is the most important.

| ☐ Market value | ☐ Cost approach |
|---|---|
| ☐ Fair value | ☐ Other _____ |

3.2 Costs and benefits of using financial reporting techniques

3.2.1 What are your perceived **costs** of using the following financial reporting techniques? (please circle)

3.2.1.1 Costs of using techniques for valuing **intangibles**

| Cost approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Income approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Market approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.2.1.2 Costs of using techniques for treating **development costs**

| Recognize them as expenses | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Recognize them as assets | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Recognize them as other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.2.1.3 Costs of using techniques for valuing **investments**

| Market value | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Fair value | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Cost approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.2.2 What are your perceived **benefits** of using the following financial reporting techniques? (please circle)

3.2.2.1 Benefits of using techniques for valuing **intangibles**

| Cost approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Income approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Market approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.2.2.2 Benefits of using techniques for treating **development costs**

| Recognize them as expenses | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Recognize them as assets | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Recognize them as other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.2.2.3 Benefits of using techniques for valuing **investments**

| Market value | N/A\|Zero\|Low\|Medium\|High\|Extreme |
|---|---|
| Fair value | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Cost approach | N/A\|Zero\|Low\|Medium\|High\|Extreme |
| Other_____ | N/A\|Zero\|Low\|Medium\|High\|Extreme |

*Note*: N/A denotes not applicable; choose N/A if the technique is not available to you.

3.3 Importance of financial reporting techniques

3.3.1 Please specify **the three most important** aspects of your financial reporting techniques. Circle these three boxes and then rank them in order putting 1, 2, or 3 in the relevant boxes, where 1 is the most important.

| ☐ Format of cash flow statements | ☐ Treatment of financial instruments |
|---|---|
| ☐ Treatment of liability | ☐ Treatment of taxes |
| ☐ Treatment of borrowing costs | ☐ Treatment of tangible assets |
| ☐ Treatment of intangible properties | ☐ Business combination |
| ☐ Pension plan | ☐ Treatment of development costs |
| ☐ Valuation of investments | ☐ Recognition of revenues |
| ☐ Treatment of leases | ☐ Treatment of contingency |
| ☐ Others _____ | |

3.3.2 Please specify **the three least important** aspects of your financial reporting techniques. Circle these three boxes and then rank them in order putting 1, 2, or 3 in the relevant boxes, where 1 is the least important.

| ☐ **Format of cash flow statements** | ☐ **Treatment of financial instruments** |
|---|---|
| ☐ Treatment of liability | ☐ Treatment of taxes |
| ☐ Treatment of borrowing costs | ☐ Treatment of tangible assets |
| ☐ Treatment of intangible properties | ☐ Business combination |
| ☐ Pension plan | ☐ Treatment of development costs |
| ☐ Valuation of investments | ☐ Recognition of revenues |
| ☐ Treatment of leases | ☐ Treatment of contingency |
| ☐ Others _____ | |

Section 4. Financial reporting regimes and financial reporting techniques

**Financial reporting regime** refers to an entire system of financial reporting regulation such as IFRS. Once you choose a financial reporting regime, you have to obey all the regulations under this system.

**Financial reporting technique** refers to a method to treat a specific aspect in financial reports. For instance, the cost approach and the market approach are financial reporting techniques for valuing intangibles.

4.1 Which of the following are true for how you determine your financial reporting regimes and techniques? (please circle)

2.1.5 (a) I compare and contrast the choices of financial reporting techniques available under each regime. Then, I determine the financial reporting regime.

Never|Sometimes|Often|Very Often|Always.

(b) I choose the financial reporting regime directly. Then, I determine the financial reporting techniques under this regime.

Never|Sometimes|Often|Very Often|Always.

(c) None of the above. What I do is (please specify) _____

Never|Sometimes|Often|Very Often|Always

4.2 How important to your choice of financial reporting **technique** is your choice of financial reporting **regime**? (please circle)

| Is the importance? | Negligible\|Low\|Medium\|High\|Extreme |
|---|---|

4.3 How important to your choice of financial reporting **regime** is your choice of financial reporting **technique**? (please circle)

| Is the importance? | Negligible\|Low\|Medium\|High\|Extreme |
|---|---|

END OF QUESTIONNAIRE

## APPENDIX B.

**Semi-structured interview agenda**

1. Choice of financial reporting regimes
   - 1.1 Choices available and the regime chosen
   - 1.2 Key factors in choosing
   - 1.3 Weighing costs/benefits in choosing
   - 1.4 Influence of choice of technique on regime choice
   - 1.5 Regime choices over different accounts
   - 1.6 Impact of emerging policy on choice

1. Choice of financial reporting techniques

2.1 Valuing intangibles

2.2 Treating development costs

2.3 Valuing investments

2.4 Importance of techniques to all types of financial reports

2. Relation between choices and their rationale

3.1 Relation between choices over regimes and techniques

3.2 Staging and the decision-making process

3.3 Reasoning behind the choosing process

3.4 Characteristics of the decision-making process